

semiconductor layer, said plurality of first conductive type semiconductor regions being formed apart from each other;

b1 a second conductive type semiconductor region selectively formed in a surface region of said first semiconductor layer, said second conductive type semiconductor region surrounding each of said plurality of first conductive type semiconductor regions with a surface portion of said first semiconductor layer therebetween;

a first electrode formed on said second conductive type semiconductor region; and

a second electrode formed on said second surface of said semiconductor substrate;

said surface portion of said first semiconductor layer between each of said plurality of first conductive type semiconductor regions and said second conductive type semiconductor region having a higher resistance than resistances of said plurality of first conductive type semiconductor regions and said second conductive type semiconductor region.

b2 5. (Twice Amended) The semiconductor light-receiving device according to claim 1, wherein each of said plurality of first conductive type semiconductor regions has an island form or a stripe form.

6. (Twice Amended) The semiconductor light-receiving device according to claim 1, wherein the surface portion of said first semiconductor layer between said second conductive type semiconductor region and each of said plurality of first conductive type semiconductor layers is completely depleted in a state in which a reverse bias is applied between said first electrode and said second electrode.

7. (Twice Amended) A semiconductor light-receiving device comprising:

a first conductive type semiconductor substrate having a first surface on a light-receiving side and a second surface on the opposite side to said first surface;

a first semiconductor layer formed on said first surface of said semiconductor substrate;

B2 a plurality of first conductive type semiconductor regions formed in said first semiconductor layer so as to reach said semiconductor substrate from a surface of said first semiconductor layer, said plurality of first conductive type semiconductor regions being formed apart from each other;

a second conductive type semiconductor region selectively formed in a surface region of said first semiconductor layer and having a plurality of openings, each of said plurality of first conductive type semiconductor regions being provided within each of said plurality of openings of said second conductive type semiconductor region respectively with a surface portion of said first semiconductor layer therebetween;

a first electrode formed on said second conductive type semiconductor region; and

a second electrode formed on said second surface of said semiconductor substrate;

said surface portion of said first semiconductor layer between each of said plurality of first conductive type semiconductor regions and said second conductive type semiconductor region has a higher resistance than resistances of said plurality of first conductive type semiconductor regions and said second conductive type semiconductor region.

B3 10. (Twice Amended) The semiconductor light-receiving device according to claim 7, wherein each of said plurality of first conductive type semiconductor regions has an island form or a stripe form.

11. (Twice Amended) The semiconductor light-receiving device according to claim 7, wherein the surface portion of said first semiconductor layer between said second conductive type semiconductor region and each of said plurality of first conductive type semiconductor regions is completely depleted in a state in which a reverse bias is applied between said first electrode and said second electrode.

12. (Twice Amended) A semiconductor light-receiving device comprising:

B3  
a first conductive type semiconductor substrate having a first surface on a light-receiving side and a second surface on the opposite side to said first surface, said first surface including a plurality of protruded surface portions separated from each other;

a first semiconductor layer selectively formed on said first surface of said semiconductor substrate, said first semiconductor layer having a higher resistance than a resistance of said semiconductor substrate and having a plurality of openings, each of said plurality of protruded surface portions of said first surface being positioned within each of said plurality of openings of said first semiconductor layer respectively;

a second conductive type semiconductor region selectively formed in a surface region of said first semiconductor layer and surrounding each of said plurality of protruded surface portions of said first surface with a surface portion of said first semiconductor layer therebetween;

a first electrode formed on said second conductive type semiconductor region; and

a second electrode formed on said second surface of said semiconductor substrate.

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16. (Amended) The semiconductor light-receiving device according to claim 12, wherein each of said plurality of protruded surface portions of said semiconductor substrate has an island form or a stripe form.

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17. (Twice Amended) The semiconductor light-receiving device according to claim 12, wherein said surface portion of said first semiconductor layer between said second conductive type region semiconductor layer and each of said plurality of protruded surface portions of said semiconductor substrate is completely depleted in a state in which a reverse bias is applied between said first electrode and said second electrode.

18. (Amended) A semiconductor light-receiving device comprising:

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a first conductive type semiconductor substrate having a first surface on a light-receiving side and a second surface on the opposite side to said first surface, said first surface including a plurality of protruded surface portions separated from each other;

a first semiconductor layer selectively formed on said first surface of said semiconductor substrate, said first semiconductor layer having a higher resistance than a resistance of said semiconductor substrate and having a plurality of openings, each of said plurality of protruded surface portions of said first surface being positioned within each of said plurality of openings of said first semiconductor layer respectively;

a second conductive type semiconductor region selectively formed in a surface region of said first semiconductor layer and having a plurality of openings, each of said plurality of protruded surface portions of said first surface being provided within each of said plurality of openings of said second conductive type semiconductor region respectively with a surface portion of said first semiconductor layer therebetween;

a first electrode formed on said second conductive type semiconductor region; and

a second electrode formed on said second surface of said semiconductor substrate.

b6  
21. (Amended) The semiconductor light-receiving device according to claim 18, wherein each of said plurality of protruded surface portions of said semiconductor substrate has an island form or a stripe form.

b7  
22. (Twice Amended) The semiconductor light-receiving device according to claim 18, wherein said surface portion of said first semiconductor layer between said second conductive type semiconductor region and each of said plurality of protruded surface portions of said semiconductor substrate is completely depleted in a state in which a reverse bias is applied between said first electrode and said second electrode.